AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1.   (withdrawn)   In a communications network, having at least two devices adapted to communicate an instruction between the devices,

a front interface provided on one computer, and a substantially corresponding back interface provided on the other computer,

the improvement comprising:

selection means for selecting the encoding, for encoding the instruction, from a set of one or more available encodings.

2.   (withdrawn)   A selection means as claimed in claim 1, wherein a stub is adapted to encode the instruction and a respective skeleton is adapted to decoding the instruction.

3.   (withdrawn)   A selection means as claimed in claim 1, wherein the set of available encodings includes a stream based communication.

4.   (withdrawn)   A selection means as claimed in claim 1, wherein the set of available encodings includes a virtual computer based communication.

5.   (withdrawn)   A selection means as claimed in claim 1, wherein the set of available encodings includes a message based communication.

6.   (withdrawn)   A selection means as claimed in claim 4, wherein the virtual computer is a computer comprising:

an object stack and/or an object heap, each of the stack and heap being adapted to store at least one object and its corresponding type identifier, and

an instruction set having at least one instruction adapted for execution by the virtual computer.

7.   (withdrawn)   A communications and/or computer network including the selection means as claimed in claim 1.

8.   (withdrawn)   A method of communicating an instruction from a first device to a second device, the first device having a first interface and the second device having a second interface, the method comprising the steps of:

      selecting a communication protocol from a set of available communication protocols,

      encoding the instruction in accordance with the selected protocol, and

      transmitting the encoded instruction from the first device to a second device.

9.   (withdrawn)   A method as claimed in claim 8, further comprising the steps of:

      receiving the encoded instruction by the second device,

      selecting a corresponding decoding protocol from an available set of communication protocols, and

      decoding the instruction in accordance with the selected decoding protocol.

10.   (withdrawn)   A method as claimed in claim 8, wherein at least one of the set of available protocols includes at least one of a message based protocol, a stream based protocol and/or a virtual computer.

11.   (withdrawn)   A virtual computer, comprising:

      an object stack and/or an object heap, each of the stack and heap being adapted to store at least one object and its corresponding type identifier, and

      an instruction set having at least one instruction adapted for execution by the virtual computer.

12.   (withdrawn)   A virtual computer as claimed in claim 11, further comprising:

      a state register being adapted to provide at least one operating register.

13.   (withdrawn)   A virtual computer as claimed in claim 11, wherein the stack enables a user to specify how each object placed on the stack is to be serialised.

14.   (withdrawn)   A virtual computer as claimed in claim 11, wherein an external identifier is recorded with an object as the object is placed on the heap.

15.   (withdrawn)   A method of executing an instruction set using a virtual computer, in a communications network having at least two devices, the method comprising the steps of:

serialising the virtual computer to a data buffer in a first device, and

transmitting the data buffer to from the first device to a second device.

16.   (withdrawn)   A method as claimed in claim 15, further comprising:

receiving the serialised data buffer,

un-serialising the data buffer, and

executing at least one instruction of the virtual computer.

17.   (withdrawn)   A method as claimed in claim 15, wherein the method is repeated to transmit the virtual computer to a further device.

18.   (withdrawn)   A method as claimed in claim 15, wherein the virtual computer is a computer comprising:

an object stack and/or an object heap, each of the stack and heap being adapted to store at least one object and its corresponding type identifier, and

an instruction set having at least one instruction adapted for execution by the virtual computer.

19.   (currently amended)   A communications format for use in providing communication between at least two devices, the format comprising:

a first portion representing data, the first portion being adapted to be rendered and communicated in an electronically communicable format, such as binary format, and

a second portion representing metadata for defining a ~~meaning~~data structure and a data format to be given to the first portion, the ~~meaning~~data structure and the data format given to the second portion being definable for each communication between said at least two devices.

20. (original) A format as claimed in claim 19, wherein the second portion is adapted to be rendered and communicated in an electronically communicable format, such as binary format.

21. (currently amended) A format as claimed in claim 19, wherein the definition given to the second portion is selectable from a set of ~~at least~~ one or more definitions.

22. (currently amended) A format as claimed in claim 19, wherein the first and second portions are communicated between said at least two devices in separate transmissions.

23. (currently amended) A format as claimed in claimed in claim 19, wherein the second portion represents a selection of at least one ~~meaning~~data structure and data format to be given to the first portion.

24. (currently amended) A format as claimed in claim 23, wherein the ~~meaning~~data structure and the data format to be given to the first portion is stored in at least one of the two devices.

25. (previously presented) A communications format as claimed in claim 19, wherein the second portion further provides information on reading the data.

26. (previously presented) A format as claimed in claim 19, wherein the second portion is a tag(s).

27. (original) A format as claimed in claim 26, wherein the tag(s) is an element of a map providing correlation to stored information defining the second portion.

28.   (original)   A format as claimed in claim 27, wherein the map is adapted to map an external identifier to an internal identifier.

29.   (previously presented)   A format as claimed in claim 19, wherein the metadata is serializable for communication between the devices.

30.   (previously presented)   A format as claimed in claim 19, wherein the metadata comprises metadata.

31.   (previously presented)   A format as claimed in claim 19, wherein the format only describes the data.

32.   (currently amended)   A method of communicating between at least two devices, the method comprising the steps of:

        providing a first portion representing data, the first portion being adapted to be rendered and communicated in an electronically communicable format, such as binary format, and

        providing a second portion representing metadata for defining a ~~meaning~~data structure and a data format to be given to the first portion, the ~~meaning~~data structure and the data format given to the second portion being definable for each communication between said at least two devices.

33.   (original)   A method as claimed in claim 32, wherein the second portion is adapted to be rendered and communicated in an electronically communicable format, such as binary format.

34.   (currently amended)   A method as claimed in claim 32, wherein the definition given to the second portion is selectable from a set of at least one or more definitions.

35.   (currently amended)   A method as claimed in claim 32, wherein the first and second portions are communicated between said at least two devices in separate transmissions.

36.   (previously presented)   A method as claimed in claim 32, wherein the second portion represents a selection of at least one meaning to be given to the first portion.

37.   (currently amended)   A method as claimed in claim 36, wherein the data structure and the data format~~meaning~~ to be given to the first portion is stored in at least one of the two devices.

38.   (previously presented)   A method as claimed in claim 32, wherein the second portion further provides information on reading the data.

39.   (previously presented)   A method as claimed in claim 32, wherein the second portion is a tag(s).

40.   (original)   A method as claimed in claim 39, wherein the tag(s) is a map providing correlation to stored information defining the second portion.

41.   (original)   A method as claimed in claim 40, wherein the map is adapted to map an external identifier to an internal identifier.

42.   (previously presented)   A method as claimed in claim 32, wherein the metadata is serializable for communication between the devices.

43.   (previously presented)   A method as claimed in claim 32, wherein the metadata comprises metadata.

44.   (previously presented)   A method as claimed in claim 32, wherein the format only describes the data.

45.   (currently amended)   An architecture for a communication device, the architecture comprising:

a programming layer for communications internal to the device,

a communications layer for communications external to the device, wherein

the external communications are in accordance with the format comprising:

a first portion representing data, the first portion being adapted to be rendered and communicated in an electronically communicable format, such as binary format, and

a second portion representing metadata for defining a ~~meaning~~data structure and a data format to be given to the first portion, the ~~meaning~~data structure and the data format given to the second portion being definable for each communication between said at least two devices.

46.   (withdrawn)   An architecture for a communication device, the architecture comprising:

a programming layer for communications internal to the device,

a communications layer for communications external to the device, wherein

the external communications are in accordance with selection means for selecting encoding, for encoding the instruction, from a set of one or more available encodings.

47.   (withdrawn)   An architecture for a communication device, the architecture comprising:

a programming layer for communications internal to the device,

a communications layer for communications external to the device, wherein

the external communications include a virtual computer comprising:

an object stack and/or an object heap, each of the stack and heap being adapted to store at least one object and its corresponding type identifier, and

an instruction set having at least one instruction adapted for execution by the virtual computer.

48.   (withdrawn)   Apparatus adapted to provide communications from a first device to a second device, said apparatus including:

processor means adapted to operate in accordance with a predetermined instruction set,

said apparatus, in conjunction with said instruction set, being adapted to perform a method comprising the steps of:

selecting a communication protocol from a set of available communication protocols,

encoding an instruction in accordance with the selected protocol, and

transmitting the encoded instruction from the first device to a second device.

49.   (withdrawn)   Apparatus adapted to execute an instruction set using a virtual computer, said apparatus including:

processor means adapted to operate in accordance with a predetermined instruction set,

said apparatus, in conjunction with said instruction set, being adapted to perform a method of executing the instruction set comprising the steps of:

serialising the virtual computer to a data buffer in a first device, and

transmitting the data buffer to from the first device to a second device.

50.   (currently amended) Apparatus   adapted   to   communicate   via   a   format comprising:

a first portion representing data, the first portion being adapted to be rendered and communicated in an electronically communicable format, such as binary format, and a second portion representing metadata for defining a ~~meaning~~data structure and a data format to be given to the first portion, the ~~meaning~~data structure and the data format given to the second portion being definable for each communication between said at least two devices, said apparatus including:

processor means adapted to operate in accordance with a predetermined instruction set,

said apparatus, in conjunction with said instruction set, being adapted to perform the communication.

51.   (withdrawn)   A computer program product including:

a computer usable medium having computer readable program code and computer readable system code embodied on said medium for providing communications from a first device to a second device within a computer system, said computer program product including:

computer readable code within said computer usable medium for performing a method comprising the steps of:

selecting a communication protocol from a set of available communication protocols,

encoding an instruction in accordance with the selected protocol, and

transmitting the encoded instruction from the first device to a second device.

52.   (withdrawn)   A computer program product including:

a computer usable medium having computer readable program code and computer readable system code embodied on said medium for executing an instruction set using a virtual computer within a computer system, said computer program product including:

computer readable code within said computer usable medium for performing a method comprising the steps of:

serialising the virtual computer to a data buffer in a first device, and

transmitting the data buffer to from the first device to a second device.

53.   (currently amended)   A computer program product including:

a computer usable medium having computer readable program code and computer readable system code embodied on said medium for providing communications within a computer system, said computer program product including:

computer readable code within said computer usable medium being adapted to communicate via a format comprising:

a first portion representing data, the first portion being adapted to be rendered and communicated in an electronically communicable format, such as binary format, and

a second portion representing metadata for defining a ~~meaning~~data structure and a data format to be given to the first portion, the ~~meaning~~data structure and the data format given to the second portion being definable for each communication between said at least two devices.

54.   (withdrawn)   A device, selection means, network substantially as herein disclosed with reference to the accompanying drawings.

55.   (withdrawn) A method substantially as herein disclosed with reference to the accompanying drawings.

56.   (currently amended)   Apparatus adapted to provide communications from a first device to a second device, said apparatus including:

processor means adapted to operate in accordance with a predetermined instruction set, said apparatus, in conjunction with said instruction set, being adapted to perform a method comprising the steps of:

providing a first portion representing data, the first portion being adapted to be rendered and communicated in an electronically communicable format, such as binary format, and

providing a second portion representing metadata for defining a ~~meaning~~data structure and a data format to be given to the first portion, the ~~meaning~~data structure and the data format given to the second portion being definable for each communication between said at least two devices.

57.   (currently amended)   A computer program product including:

a computer usable medium having computer readable program code and computer readable system code embodied on said medium for providing communications from a first device to a second device within a computer system, said computer program product including:

computer readable code within said computer usable medium for performing a method comprising the steps of:

providing a first portion representing data, the first portion being adapted to be rendered and communicated in an electronically communicable format, such as binary format, and

providing a second portion representing metadata for defining a ~~meaning~~data structure and a data format to be given to the first portion, the ~~meaning~~data structure and the data format given to the second portion being definable for each communication between said at least two devices.